

WHAT IS CLAIMED IS:

1. An isolated polynucleotide coding for an arabinose isomerase from *Thermatoga neapolitana*.
2. The isolated polynucleotide of Claim 1 having the sequence of SEQ. ID NO:
- 3.
3. An expression vector comprising the isolated polynucleotide of Claim 1.
4. The expression vector of Claim 3, wherein the expression vector is pTNAI.
5. A host cell transformed with the expression vector of Claim 3.
6. The host cell of Claim 5, wherein the host cell is *E. coli*.
7. The host cell of Claim 5, wherein the host cell is *E. coli* BL21/DE3 (pTNAI) deposited as Accession No. KCCM-10231.
8. An isolated polypeptide of arabinose isomerase isolated from *Thermatoga neapolitana*.
9. An isolated polypeptide of arabinose isomerase encoded by the polynucleotide of Claim 1.
10. The isolated polypeptide of Claim 9, wherein said arabinose isomerase has the amino acid sequence of SEQ. ID NO: 4.
11. The isolated polypeptide of Claim 10, further comprising a solid support.
12. The isolated polypeptide of Claim 11, wherein the solid support is a silica bead.
13. A method of producing an arabinose isomerase, the method comprising:
providing the host cell of Claim 5; and
culturing the host cell in a medium, thereby producing an arabinose isomerase.
14. The method of Claim 13, further comprising purifying or isolating the arabinose isomerase.
15. The method of Claim 13, wherein the host cell is *E. coli* BL21/DE3 (pTNAI) deposited as Accession No. KCCM-10231.
16. An arabinose isomerase produced by the method of Claim 13.
17. A method of producing tagatose, comprising:
providing the isolated polypeptide of Claim 9; and

admixing the arabinose isomerase with galactose, thereby causing a reaction and producing tagatose.

18. The method of Claim 17, wherein the reaction is carried out at a pH from about 5 to about 8.

19. The method of Claim 17, wherein the reaction is carried out at a temperature from about 50°C to about 100°C.

20. The method of Claim 19, wherein the reaction is carried out at a temperature from about 70°C to about 95°C.

21. The method of Claim 17, wherein the isolated polypeptide is attached to a solid support.

22. The method of Claim 21, wherein the solid support is a silica bead.

23. The method of Claim 17, wherein the reaction is carried out at a temperature of about 80°C.